

Patent claims

1. Method for optimizing the efficiency of an amplifier arrangement with a non-linear power amplifier (LV) in a mobile radio device.

characterized in that,

the amplifier arrangement with a non-linear power amplifier (LV) and two subsequent push-pull phase modifiers (PS) generates a signal offset in phase from the input signal and that the outputs of the phase modifiers (PS) are connected by a passive component (SU, LAW).

2. Method according to Claim 1,

characterized in that,

a symmetrical transformer (SÜ) of the amplifier arrangement is used as the passive component.

3. Method according to one of the previous claims

characterized in that,

after the phase modifiers (PS) a power is obtained at a passive component (SÜ, LAW).

4. Method according to one of the previous claims

characterized in that,

an amplitude-modulated signal is generated by the amplifier arrangement with a power amplifier (LV) and two push-pull successive phase modifiers (PS) by means of fed amplitude information.

5. Method according to one of the previous claims

characterized in that,

a load balancing resistor (LAW) is used in the amplifier arrangement as the passive component.

6. Method according to one of the previous claims

characterized in that,

in a symmetrical transformer (SÜ) a voltage is decoupled which

is rectified in a rectifier (GR), with the direct current output by the rectifier (GR) being fed to a supply unit (VE) as charge current.

7. Method according to one of the previous claims characterized in that,  
Power is dissipated in load balancing resistor (LAW) which follows the phase modifiers (PS).

8. Method according to one of the previous claims characterized in that,  
the push-pull phase modifiers (PS) are controlled using a modulation signal.

9. Method according to one of the previous claims characterized in that,  
the power dissipation is referenced in a symmetrical amplifier (SU) to a voltage potential.

10. Method according to one of the previous claims characterized in that,  
the signal generated by the power amplifier (LV) is divided into two part signals of equal size (PRF 1, PRF 2) and fed to the two phase modifiers (PS).

11. Method according to one of the previous claims characterized in that,  
the input impedance of the rectifier (GR) is amplitude-independent.

12. Method according to one of the previous claims characterized in that,  
a single-path or multipath rectifier is used as the rectifier (GR).

13. Method according to one of the previous claims characterized in that,

the power amplifier (LV) is embodied for distortion-free transmission of the signal components such that the maximum peak power arising can be transmitted with a deviation of up to 6 dB.

14. Method according to one of the previous claims characterized in that, the transmitted power of the power amplifier (LV) lies up to 6 dB around the crest factor above the average power required at the output.

15. Method according to one of the previous claims characterized in that, the supply unit (VE) is a battery, an ac adapter and/or similar.

16. Amplifier arrangement for a mobile radio device,  
- with a non-linear power amplifier (LV) and two push-pull phase modifiers (PS) each connected to the power amplifier (LV) to create a signal offset in phase to the input signal in each case,  
- with a passive component (SÜ, LAW) connected to the outputs of the phase modifiers (PS).

17. Device in accordance with Claim 16, characterized in that, a symmetrical transformer (SÜ) for referencing the power dropping at the symmetrical transformer (SÜ) to a voltage potential is provided as the component.

18. Device in accordance with one of the previous claims, characterized in that, a load balancing resistor (LAW) is provided as the component.

19. Device in accordance with one of the previous claims, characterized in that, a symmetrical transformer (SÜ) is provided for decoupling a

voltage and

a rectifier (GR) is provided for rectifying the voltage and for feeding the direct current output to a supply unit (VE) as charge current.

20. Device in accordance with one of the previous claims, characterized in that,  
a load balancing resistor (LAW) is provided after the phase modifiers (PS) for converting the power.